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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,068	07/14/2006	James William Griffith Turner	BWT-74734	3262

24201 7590 11/19/2008

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EXAMINER	
TRIEU, THAI BA	
ART UNIT	**PAPER NUMBER**
3748	
MAIL DATE	**DELIVERY MODE**
11/19/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,068	TURNER, JAMES WILLIAM GRIFFITH	
	Examiner	Art Unit	
	Thai-Ba Trieu	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,8,15,16,26,29 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,8,15,16,26,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Amendment filed on August 26, 2008. Applicant's cooperation in correcting the informalities in the specification is appreciated. Applicant's cooperation in amending the claims to overcome the claim objections relating to informalities as well as indefinite claim language is also appreciated.

Claims 1-4, 8, 15-16, 26, 29-30 were amended; and

Claims 5-7, 9-12, and 17-25 were cancelled.

Claims 13 and 27 are specifically readable on the non-elected species of Figure 5; therefore, claims 13 and 27 are not examined on the merits.

Claims 14 and 28 are specifically readable on the non-elected species of Figure 6; therefore, claims 14 and 28 are not examined on the merits.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ***"actuator means", electronic controller"*** (See Claim 1, line 21 of the Amendment to claims filed on 08/26/2008) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The Amendments to the Specification submitted on August 26, 2008 has been approved for entry.

Claim Objections

Claims 1, 4 and 29 are objected to because of the following informalities:

- In claim 1, line 35, ***"the flow of exhaust gas ... is varied"*** should be replaced by **-- the flow of exhaust gas ... being varied –** *(for correction grammatical error).*

- In claim 4, line 4, **-- said –** or **– the –** should be inserted before ***"inlet valve means"*** *(for addressing double recitation).*

- In claim 8, lines 37-38, ***"all expanded exhaust gases ... are fed"*** should be replaced by **– all expanded exhaust gases ... being fed –** *(for correction grammatical error).*

- In claim 29, lines 2 and 4-5, the recitations of ***"can inject fuel"*** and ***"can inject alternatively fuel"*** should be replaced by **– inject fuel –** and **– inject alternatively fuel –**.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 and its dependent claims 2-4 and 15-16; claim 8 and its dependent claims 9-11, 26, and 29-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap

between the elements. See MPEP § 2172.01. The omitted elements are: "***delivering fuel into the air*** for producing exhaust gases/combusted gases".

The turbocharged internal combustion engine having cylinders (100-103) of the instant application, which just receives air from the compressor means (105B, 107B), will perform as a compressor or a pump and cannot produce exhaust gases to be delivered into the turbine (105A, 107B) in order to drive the compressor means (105B, 107B) (See Figure 2 of the Instant application). Accordingly, ***"fuel being delivered into air"*** is needed to produce exhaust gases/combusted gases in order that the system of the instant application can perform its function as a turbocharged internal combustion engine.

2. Claim 1 recites the limitations of ***"the electronic controller"*** and ***"the actuator means"*** in line 21 (See Amendment to Claim 1 submitted on 08/26/2008). There is insufficient antecedent basis for these limitations in the claim.

3. Claim 1, lines 26-27, the recitation of ***"engine having a first operating condition"*** renders the claim indefinite, since its is not clear that which condition of the engine is to be compared with to be considered as a first operating condition? Applicant is required to identify the first operating condition of the engine or to revise the claimed features.

4. Claim 1, lines 32-35, the recitation of ***"all exhaust gases passing through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger and the flow of exhaust gas through the first turbocharger being varied in rate of flow by variation of opening and closing of the exhaust valve means with changes in engine speed"*** renders the claim indefinite, since its is not clear that which condition of the engine that the controller controls the actuator means to open the exhaust valves (a) and close the exhaust gas valves (b) in order that all exhaust gases pass through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger?

Additionally, under which condition of the operating engine, ***all exhaust gases*** *(in plural form, emphasis added)* passing through the first turbocharger; and under which condition of the operating engine ***the flow of exhaust gas*** *(partial/varied flow) (in singular form, emphasis added)* through the first turbocharger?

Applicant is required to identify the condition(s) of operating engine for all exhaust valves (a) being opened and all exhaust (b) being closed in order that all exhaust gases (full flow) is capable of being delivered through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger; and the condition(s) of operating engine for the flow of exhaust gas being varied *(partial/varied flow)* through the first turbocharger.

Note that if the engine is operating in the first condition as being claimed in amended claim 1, either full flow/all exhaust gases flow through the first turbocharger or partial/varied flow of exhaust gas flow through the first turbocharger.

5. In claim 4, line 4, the recitation of ***"inlet valve means***" is double recitation in claims.

6. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are:

"***delivering fuel into the air*** for producing exhaust gases/combusted gases";

"an electronic controller"; and

"actuator means".

The turbocharged internal combustion engine having cylinders (100-103) of the instant application, which just receives air from the compressor means (105B, 107B), will perform as a compressor or a pump and cannot produce exhaust gases to be delivered into the turbine (105A, 107B) in order to drive the compressor means (105B, 107B) (See Figure 2 of the Instant application). Accordingly, ***"fuel being delivered into air"*** is needed to produce exhaust

gases/combusted gases in order that the system of the instant application can perform its function as a turbocharged internal combustion engine.

Additionally, "an electronic controller" and "actuator means" are needed for controlling the inlet valve means and exhaust valve means, since without "an electronic controller" and "actuator means", the inlet/exhaust valve means are un-operative devices and cannot let all air delivered to the combustion chambers/ exhaust gases discharged out of the combustion chambers.

7. Claim 8, lines 26-27, the recitation of ***"a first operating condition"*** renders the claim indefinite, since its is not clear that which condition of the engine is to be compared with to be considered as a first operating condition? Applicant is required to identify the first operating condition of the engine or to revise the claimed features.

8. Claim 8, lines 30-33, the recitation of ***"all exhaust gases flowing through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger and the second exhaust delays exhaust gas to the second lower pressure turbocharger, bypassing the first high pressure turbocharger..., and all expanded exhaust gases leaving the first high pressure turbocharger being fed into the second exhaust duct to be relayed to the second low pressure turbocharger"*** renders the claim indefinite, since its is not clear that which condition of the engine that the

controller controls the actuator means to open the exhaust valves (a) and close the exhaust gas valves (b) in order that all exhaust gases pass through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger?

Additionally, under which condition of the operating engine, the first exhaust duct relaying exhaust gas … with ***all exhaust gases*** *(full flow)* (in plural form, emphasis added) passing through the first turbocharger; and under which condition of the operating engine the second duct relaying exhaust gas *(partial/varied flow)* bypassing (emphasis added) the first turbocharger?

Applicant is required to identify the condition(s) of operating engine for all exhaust valves (a) being opened and all exhaust (b) being closed in order that all exhaust gases (full flow) is capable of being delivered through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger; and the condition(s) of operating engine for the flow of exhaust gas *(partial/varied flow)* bypassing the first turbocharger.

Note that if the engine is operating in the first condition as being claimed in amended claim 8, either full flow/all exhaust gases flow through the first turbocharger or partial/varied flow of exhaust gas flow bypassing the first turbocharger.

9. Claim 8, line 42, the recitation of "can bypass" renders the claim indefinite, since it is not clear that under which operating condition of the engine, air can bypass the first high pressure turbocharger; and under which operating condition of the engine, air cannot bypass the first high pressure turbocharger? Applicant is required to identify the conditions for air bypassing/not bypassing the first high pressure turbocharger, or to revise the claimed language.

10. Claim 30 recites the limitations of ***"the controller"*** and ***"the actuator means"*** in line 2 (See Amendment to Claim 30 submitted on 08/26/2008). There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, and 15 are rejected under 35 U.S.C. 102(b) as best understood as being anticipated by Takeshi Yamane (Patent Number JP 61-164039 A).

Takeshi Yamane discloses a turbocharged internal combustion engine (1) comprising:

a variable volume combustion chamber (2);

inlet valve means (20, 21) controlling flow of air into the combustion chamber (2);

exhaust valve means (22, 23) for controlling flow of combusted gases from the combustion chamber (2);

compressor means (5B, 6B) for compressing the air prior to admission of the air into the combustion chamber (2);

the exhaust valve means (22, 23) comprises at least a first exhaust valve (22) connected to a first exhaust duct (24) and at least a second exhaust valve (23) connected to a second exhaust duct (25) separate and independent from the first exhaust duct (24);

the compressor means (5B, 6B) comprises a first turbocharger (5A) and the first exhaust duct (24) is connected to the first turbocharger (5A) so that exhaust gases passing through the first exhaust duct (24) drive the first turbocharger (5A) to rotate;

the second exhaust duct (25) bypasses the first turbocharger (5, 5A) and the combusted gases flowing through the second exhaust duct (25) are exhausted without passing through the first turbocharger (5, 5A); and

the electronic controller (Not Shown, Well-known components of the internal combustion engines) by controlling operation of the actuator means (Not Shown, Well-known components of the internal combustion engines) and thereby the opening and closing of the first and second exhaust valves (22, 23) is operable to control flow of the combusted gases leaving the combustion chamber (2) flow through each of the first and second exhaust ducts (24, 25);

the compressor means (5B, 6B) comprises additionally a second turbocharger (6, 6B, 6A);

wherein the first turbocharger (5, 5B, 5A) is a high pressure turbocharger and the engine has a first operating condition in which the high pressure turbocharger (5, 5B, 5A) receives compressed air at a first pressure from the second turbocharger (6, 6B, 6A), which is a low pressure turbocharger, and the first turbocharger (5B) compresses the air to a second higher pressure;

combusted gases leaving the first turbocharger (5, 5B, 5A) after expansion in a turbine (5A) thereof are combined with the combusted gases flowing in the second exhaust duct (25) and then the combined flow of combusted gases drive the second turbocharger (6, 6B, 6A) to rotate;

all exhaust gases passing through the first exhaust gas duct flow through the first turbocharger prior to flowing the second turbocharger (See Page 6, lines 12-19 of a translation copy); and

the flow of exhaust gas through the first turbocharger being varied in rate of flow by variation of opening and closing of the exhaust valves means with changes in engine speed (See Page 6, lines 12-19 of a translation copy);

a first intercooler (10) through which air compressed in the second low pressure turbocharger (6, 6B, 6A) passes before reaching the first high pressure turbocharger (5, 5B, 5A) (See Figure 1-2 and 4, and Abstract); and

which has a first combustion mode in which fuel is mixed with air to produce homogenous mixture which is then ignited by homogeneous charge compression ignition and which has a second combustion mode in which fuel is ignited by compression ignition in the combustion chamber?

Note that the recitation of "which has a first combustion mode in which fuel is mixed with air to produce homogenous mixture which is then ignited by homogeneous charge compression ignition and which has a second combustion mode in which fuel is ignited by compression ignition in the combustion chamber" is considered as the functional language. Takashi Yamane discloses all the structural components of an engine system, which are read on those of the instant invention. Therefore, the Takashi Yamane system is capable of performing the same desired functions as the instant invention having been claimed in claim 15.

Additionally, when a claim includes a 'which" clause or similar clause, it must contain, in order to be complete, an enumeration of sufficient elements to perform the function so specified in such clause. A "which' clause is not objectionable. It merely states the result and adds nothing to the patentability of a claim (Israel v. Cresswell, 76 USPQ 594; In re Boileau, 1948 C. D. 83).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yasuyuki Santo (Patent Number JP 01-285619 A).

Takeshi Yamane discloses the invention as recited above; however, Takeshi Yamane fails to disclose a catalytic converter and its location.

Yasuyuki Santo teaches that it is conventional in the supercharged internal combustion engine art, to utilize a catalytic converter (15) receiving combusted gases leaving the second turbocharger then to atmosphere (See Figure 1).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a catalytic converter and its location, to reduce exhaust emissions for the Takeshi Yamane device.

Claims 4, 8, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yuji Hirabayashi (Patent Number JP 61-277818 A).

Takeshi Yamane discloses a turbocharged internal combustion engine comprising:

a variable volume combustion chamber (2);

inlet valve means (20, 21) controlling flow of air into the combustion chamber (2);

exhaust valve means for controlling flow of combusted gases from the combustion chamber;

compressor means (5B, 6B) for compressing the air prior to admission of the air into the combustion chamber (2);

the exhaust valve means (22, 23) comprises at least a first exhaust valve (22) connected to a first exhaust duct (24) and at least a second exhaust valve (23) connected to a second exhaust duct(25) separate and independent from the first exhaust duct (24);

the compressor means (5B, 6B) comprises a first turbocharger (5, 5B, 5A) and the first exhaust duct (24) is connected to the first turbocharger (5, 5B, 5A) so that exhaust gases passing through the first exhaust duct (24) drive the first turbocharger (5, 5B, 5A) to rotate;

the second exhaust duct (25) bypasses the first turbocharger (5, 5B, 5A) and the combusted gases flowing through the second exhaust duct (25) are exhausted without passing through the first turbocharger (5, 5B, 5A);

the compressor means (5B, 6B) comprises a second low pressure turbocharger (6, 6B, 6A) which in a first operating condition of the engine compresses air to a first pressure and the first turbocharger (5, 5B, 5A) is a high pressure turbocharger which compresses air compressed by the low pressure turbocharger (6, 6B, 6A) to a second pressure higher than the first pressure;

the first exhaust duct (24) relays exhaust gas to the first high pressure turbocharger (5, 5B, 5A) to drive the first high pressure turbocharger to rotate with all exhaust gas flowing through the first exhaust gas duct passing through the first high pressure turbocharger, and the second exhaust duct (25) relays

exhaust gas to the second lower pressure turbocharger (6, 6B, 6A), bypassing (via 7) the first high pressure turbocharger, to drive the second low pressure turbocharger to rotate;

all expanded exhaust gases leaving the first high pressure turbocharger (5, 5B, 5A) being fed into the second exhaust duct (25) to be relayed to the second low pressure turbocharger (6, 6B, 6A) (See Figures 1-2 and 4, and Abstract);

all air delivered to the combustion chamber via the intake valve means (20, 21) flows through an intake air passage connecting the intake valve means to both the first high pressure turbocharger (5, 5A, 5B) and also to a bypass passage (29) through which air can bypass the first high pressure turbocharger (5, 5A, 5B);

wherein the compressor means comprises additionally an intercooler (10) for cooling the compressor intake air prior to delivery of the air into the combustion chamber (2) (See Figures 1-2 and 4);

wherein the injector means (Not Shown, Well-known components of the internal combustion engines) can inject fuel into the combustion chamber (2) early enough in an upstroke for mixing of the fuel with air to produce a homogeneous mixture which is then ignited by homogenous charge compression ignition and wherein the injection means (Not Shown, Well-known components of the internal combustion engines) can alternatively inject fuel later in the upstroke for compression ignition in the combustion chamber.

Takeshi Yamane discloses the invention as recited above; however, Takeshi Yamane fails to disclose an intake air bypass passage having a bypass valve.

Hirabayashi teaches that it is conventional in the art of multistage type turbo-supercharged internal combustion engines, to utilize a bypass passage (from 5 to 18) having a bypass valve (7) controlling flow of air through the bypass passage and the engine has a second operating condition in which air flows through the bypass passage bypassing the first high pressure turbocharger; and all air received by the combustion chamber is compressed first by the first turbocharger (See Figures 1-2, Abstract).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a bypass passage having a bypass valve, as taught by Hirabayashi, to improve the efficiency of the Takeshi Yamane device, since the use thereof would have control the compressed intake air to be delivered into the engine based on the operating condition of the engine.

Note that the recitation of "wherein the injector means can inject fuel into the combustion chamber early enough in an upstroke for mixing of the fuel with air to produce a homogeneous mixture which is then ignited by homogenous charge compression ignition and wherein the injection means can alternatively inject fuel later in the upstroke for compression ignition in the combustion chamber" is considered as the functional language. Takashi Yamane discloses all the structural components of an engine system, which are read on those of the instant invention. Therefore, the Takashi Yamane system is capable of performing the same desired functions as the instant invention having been claimed in claim 29.

Additionally, when a claim includes a 'whereby" clause or similar clause, it must contain, in order to be complete, an enumeration of sufficient elements to perform the function so specified in such clause. A "whereby' clause is not objectionable. It merely states the result and adds nothing to the patentability of a claim (Israel v. Cresswell, 76 USPQ 594; In re Boileau, 1948 C. D. 83).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of either Lovell (Patent Number 3,202,141) or Gray (Patent Number 6,550,430 B2).

Takeshi Yamane discloses the invention as recited above; however, Takeshi Yamane fails to disclose the exhaust valve means being closed to trap combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition.

Lovell/Gray teaches that it is conventional in the art of operating compression ignition engine, to utilize in part loading operating conditions of the engine, the exhaust valve means being closed during the upstroke of the piston in order to trap combusted gases in the combustion chamber, the trapped combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition (Column 3, lines 27-54, Column 7, lines 74-75, and Column 8, lines 1-8 of Lovell; Column 2, lines 25-45, Column 3, lines 62-67, Column 4, lines 1-21, Column 6, lines 59-

67, Column 7, lines 1-4 and 27-42, Column 13, lines 25-67, Column 14, lines 36-53, Column 15, lines 4-10 and 32-51 of Gray).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the exhaust valve means being closed to trap combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition, to improve the efficiency of Takeshi Yamane device, since the use thereof would have controlled the desired air-fuel ratio for operating the engines.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi Yamane (Patent Number JP 61-164039 A), in view of Yuji Hirabayashi (Patent Number JP 61-277818 A), and further in view of either Lovell (Patent Number 3,202,141) or Gray (Patent Number 6,550,430 B2).

The modified Takeshi Yamane device discloses the invention as recited above; however, fails to disclose the exhaust valve means being closed to trap combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition.

Lovell/Gray teaches that it is conventional in the art of operating compression ignition engine, to utilize in part loading operating conditions of the engine, the exhaust valve means being closed during the upstroke of the piston in order to trap combusted

gases in the combustion chamber, the trapped combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition (Column 3, lines 27-54, Column 7, lines 74-75, and Column 8, lines 1-8 of Lovell; Column 2, lines 25-45, Column 3, lines 62-67, Column 4, lines 1-21, Column 6, lines 59-67, Column 7, lines 1-4 and 27-42, Column 13, lines 25-67, Column 14, lines 36-53, Column 15, lines 4-10 and 32-51 of Gray).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the exhaust valve means being closed to trap combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in the first combustion mode with homogenous charge compression ignition, to improve the efficiency of the modified Takeshi Yamane device, since the use thereof would have controlled the desired air-fuel ratio for operating the engines.

Response to Arguments

Applicant's arguments filed August 26, 2008 have been fully considered but they are not persuasive. Accordingly claims 1-4, 8, 15-16, 26, and 29-30 are pending.

1. DRAWINGS:

In response to the applicant's arguments on page 10 with respect to the objections to the drawings, applicant states that "the drawings are objected as not showing the "fuel delivery means," "actuator means," and "electronic

controller." These terms have been deleted from the claims, so that it is believed that the objections to the drawings can now be withdrawn.

The examiner respectfully disagrees. The objections to the drawings can be withdrawn because of the reasons being set forth above.

2. Rejections under 35 U.S.C. §102 (b)

In response to the applicant's arguments on pages 11-12, applicant states that Yamane fails to disclose "all exhaust gases passing through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger"; and "the flow of exhaust gas through the first turbocharger being varied in rate of flow variation of opening and closing of the exhaust valve means with changes in engine speed".

The examiner respectfully disagrees since the Yamane turbocharged internal combustion engine is capable of performing with all exhaust gases (full flow) passing through the first exhaust duct flow through the first turbocharger prior to flowing through the second turbocharger as the bypass valve 9 is closed. Additionally, Yamane also teaches that "the flow of exhaust gas (varied/partial flow) through the first turbocharger being varied in rate of flow variation of opening and closing of the exhaust valve means with changes in engine speed", as the exhaust valves (22) are closed (See Page 6, lines 12-19 of a translation copy).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB
November 14, 2008

/Thai-Ba Trieu/
Primary Examiner
Art Unit 3748